DOCUMENT RESUME

ED 266 598 EC 182 013

AUTHOR Hedberg, Natalie L.; Fink, Ruth J.
TITLE Surface and Deep Structure Characteristics of Language Disordered Children's Narratives.
PUB DATE Nov 85
NOTE 14p.; Paper presented at the Annual Conference of the American Speech, Language and Hearing Association (12th, Washington, DC, November 22-25, 1985).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Coherence; Cohesion (Written Composition); *Deep Structure; Elementary Education; Language Acquisition; *Language Handicaps; *Narration; *Surface Structure
IDENTIFIERS *Strong Grammar

ABSTRACT

The study compared linguistic analyses of 27 language disabled and 30 normal language children in grades 1-6. The first procedure, cohesive tie analysis, examined surface characteristics of a text for connections between lingustic components that contribute to coherence; the second procedure, story grammar, examined underlying story organization as an indication of the deep structure aspects of coherence. Each S was asked to construct an oral and written story using a toy doll family as stimuli. Analysis of surface and deep structure semantic characteristics showed that language disabled Ss were extremely deficient in their ability to use deep structure knowledge of narrative organization in constructing stories. Surface structure aspects of narrative organization were similar except that the youngest language disabled Ss made significantly more errors in attempting to use cohesion than their normal peers. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy

ED266598

Surface and Deep Structure Characteristics of Language Disordered Children's Narratives

Natalie L. Hedberg, Ph.D. and

Ruth J. Fink, M.A.

University of Colorado, Boulder

American Speech-Language-Hearing Association Convention

Washington, D.C.

November 22, 1985

EC182013

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Natalie L. Hedberg
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Introduction

During past ASHA conventions (1982, 1983, 1984) we have reported on various procedures for studying narrative abilities as we searched for analyses that would be most useful clinically. In this paper we will present the findings from two procedures which seem to be particularly appropriate for clinical use. The first procedure, cohesive tie analysis, examines surface characteristics of a text for connections between linguistic components that contribute to coherence. The second analysis, story grammar, is concerned with underlying story organization. It is an analysis of the deep structure aspects of coherence. The analyses were applied to a set of cross-sectional data from language disordered elementary-school children.

Subjects

Subjects were 27 language disabled (LD) and 30 normal language (N) children in grades one through six. Subjects were grouped into six groups according to language status and grade level - first-second; third-fourth; and fifth-sixth. Each group had 10 subjects except the first-second grade LD group which had seven subjects. Mean ages and grades are shown by group in table 1. The underlined scores are the grand means for the groups. The LD subjects had a mean age of 9 years 11 months compared to the normal subjects' 9 years 10 months. The respective mean grade levels were 4.0 and 4.1.

The selection criteria for the LD subjects were full-scale IQ within the normal range on the WISC-R and a verbal IQ at least 15 points below the performance IQ. In addition, the children were receiving speech-language or learning disability services within their schools. They were not receiving other types of services and did not have other deficits. The mean verbal, performance and full-scale IQs appear in table 2. The grand means are 88 for verbal IQ, 109 for performance IQ, and 98 for full-scale IQ.

Normal subjects were selected by their classroom teachers who were asked to identify average readers who had never repeated a grade or received special services.

Data Collection

Each subject was asked to construct an oral and a written story using a toy doll family as stimuli. The stimuli are shown on the next transparency. The data were collected in the children's schools by graduate assistants. Oral stories and reading of the written stories were tape recorded and transcribed by the assistants.

Linguistic Analyses

Stories were divided into T-Units and analyzed to determine their surface structure and deep structure semantic characteristics. Hedberg and Stoel-Gammon's (1983) adaptation of Halliday and Hasan's (1976) cohesive tie analysis was used to study surface structure aspects of coherence. Cohesion results from connections between linguistic items. The five types of cohesive ties detailed by Halliday and Hasan are shown on the next transparency: reference, conjunction, substitution, ellipsis and lexical. The next transparency shows the three measures of cohesion computed: unweighted cohesive ties, weighted cohesive ties, and attempts at cohesion. The total number of cohesive ties across T-Units was divided by the total number of words in the story. Thus, the first measure of cohesion was the percentage of total words in the story that were included in cohesive ties.

In addition, a weighted percentage score, reflecting the level of ties used, was also computed. An example of the weighting procedure can be seen in the use of the word "creature" to refer to a previously mentioned cat. The score for "creature" would be three compared to one for a mere repetition of cat.

Unsuccessful attempts at cohesion, the third aspect of cohesion studied, was also represented as a percentage of total words produced. The use of a pronoun in the absence of a lexical referent is an example of an attempt.

Our second measure, story grammar analysis, which is concerned with underlying story organization, deals with the specific elements of a story that must be present for a story to be well-formed. Stein and Glenn (1979) describe seven categories of statements found in well-constructed stories. These are shown on the next transparency; setting, initiating event, internal response, internal plan, attempt, consequence, and reaction.

Glenn and Stein (1980) have proposed a developmental sequence for the acquisition of story structures consisting of seven major structural patterns as shown on the next transparency. These vary in complexity from simpler to most complex. We have modified their sequence slightly by adding a zero level for unrelated statements.

Statistical Analyses

The statistical analyses were based on a 2X3X2 factorial design with two groups, LD and normal; three grade levels; and two modes, oral and written. Tests of significance were carried out with the SPSS Manova program using the unique sums of squares for unequal groups. Correlational analyses were also computed.

Results

Graphs of the results are shown on the transparencies.
There was a significant effect for grade on total unweighted cohesive ties with the third and fourth graders using the largest percentage of cohesive ties. Although the normal subjects used more cohesive ties than the LD groups, the group differences were not significant. There was also no effect for output mode (Figure 1).

These findings are in accord with other studies we have completed. Thus, we see a curvilinear developmental pattern for cohesive tie use, peaking at third-fourth grade level. In addition, language disordered children do not differ significantly from normal children in the proportion of words they include in cohesive ties.

However, there were significant group differences on the weighted measure of cohesion (Figure 2). Here the normal subjects used more higher level forms of cohesive ties than the LD subjects, but only at the two higher grade levels.

The most clinically relevant finding for cohesive tie use related to the third measure, unsuccessful attempts at cohesive ties (Figure 3). Here we had significant effects for group, grade and mode and a group by grade interaction. As is shown on the graph, the second grade LD subjects evidenced a much higher percentage of errors in cohesion in both modes.

The most consistent and pervasive differences in narrative abilities were uncovered with the story grammar analysis (Figure 4). There were very significant effects for group, grade and mode with a group by grade by mode interaction. Here the youngest normal children's oral narrative construction abilities exceeded those of the two older groups of LD children. In fact, the LD subjects at all grade levels failed to use episodic structure in either their oral or written stories.

Correlational analyses were also carried out with some interesting findings. Story length was significantly correlated with the successful use of cohesive ties and story grammar levels. In addition, use of cohesive ties was significantly positively correlated with story grammar levels while attempts at cohesive ties was significantly negatively correlated. And finally, there were significant correlations between the oral and written modes for the three measures of cohesion and for story grammar.

Summary and Implications

The most important finding of this study comparing linguistic analyses of language disordered and normal elementary children parallels the findings of other studies we have carried out on communicatively disordered children and adults. The measure of story grammar shows that the LD children are extremely deficient in their ability to use deep structure knowledge of narrative organization in constructing stories. In contrast, the surface structure aspects of narrative organization were similar except that the youngest LD children made significantly more errors in attempting to use cohesion than their normal peers.

Two important cautions are urged in interpreting these findings. The first is that we only studied use of narrative structures in constructing stories. To tap knowledge of these structures one could use a story retelling task or a sequence of pictures that represent a story. Secondly, this finding does not lead to the implication that the deficiency is innate or that LD children are unable to learn to use the deep structure of narratives. Rather, we would conjecture that their attention has been directed away from this most important meaning-oriented aspect of discourse through the emphasis placed by both regular and special educators on the more surface aspects of language form.

The components of story grammars have been brought to our attention only recently. We will incorporate them into our evaluation and therapy techniques as we increase our focus on the meaningful aspects of discourse.

References

Applebee, A. N. The child's concept of story. Chicago: University of Chicago Press, 1978.

Glenn, C. G. & N. Stein Syntactic structures and real world themes in stories generated by children. (Technical report) Urbana: University of Illinois, Center for the Study of Reading. 1980.

Halliday, M.A.K., & R. Hasan. Cohesion in English. London: Longman, 1976

Hedberg, N. L. Narrative Event Chain Analysis: A View of Cognition. ASHA 1983 Convention Presentation.

Hedberg, N. L., Fink, R. & Keasley, A. Productivity, Syntax and Cohesion in Communicatively Disordered Children's Stories. ASHA 1982 Convention Presentation.

Hedberg, N. L. & C. Stoel-Gammon. Discourse Analysis Manual. Unpublished, 1983.

Hedberg, N. L., Stoel-Gammon, C., Westby, C. & Yoshinaga, C. Discourse Analysis: Methods, Research Findings and Implications. ASHA 1984 Convention Presentation.

Hunt, K. W. Syntactic Maturity in Schoolchildren and Adults. Monographs of the Society for Research in Child Development. Serial No. 134, Vol. 35, No. 1, 1970.

Stein, N. L. & Glenn, C. G. An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.) New Directions in Discourse Processes. Norwood, N.J.: Ablek, 1979.

TABLE 1
SUBJECT CHARACTERISTICS

GROUP	GRADE LEVEL	N	MEAN CA	MEAN GRADE
LD	1-2	7	8-4	2.6
	3-4	10	9-9	3.8
	5-6	10	11-7	5.5
GRAND MEANS			9-11	4.0
N	1-2	10	8-1	2.8
	3-4	10	10-2	4.0
	5-6	10	11-3	5.5
GRAND MEANS			9-10	4.1

TABLE 2

LD GROUPS' MEAN IQ

GRADE	VERBAL	PERFORMANCE	FULL SCALE
1-2	85	106	95
3-4	87	107	96
5-6	93	114	103
GRAND MEANS	88	109	98

Figure 1.

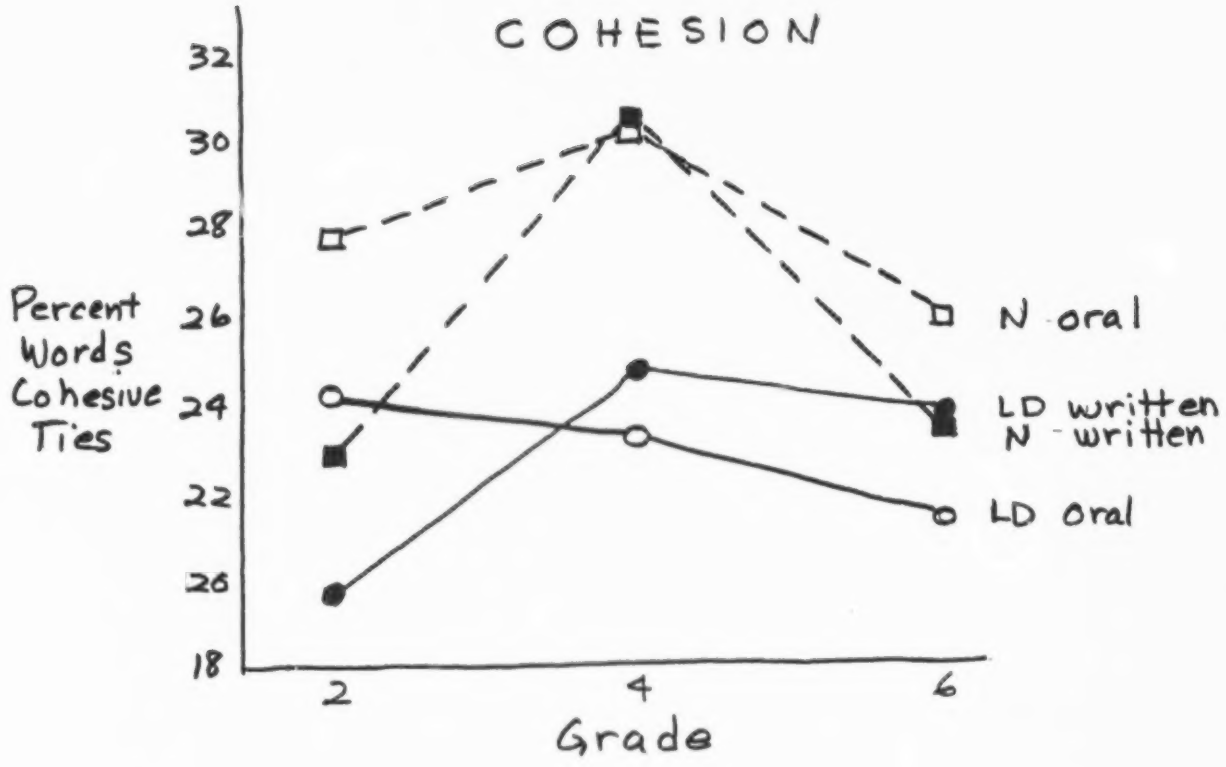

COHESION
32
30
28
26
24
22
20
18
Percent Words Cohesive Ties
2
4
6
Grade
N oral
LD written
N written
LD oral

Figure 2

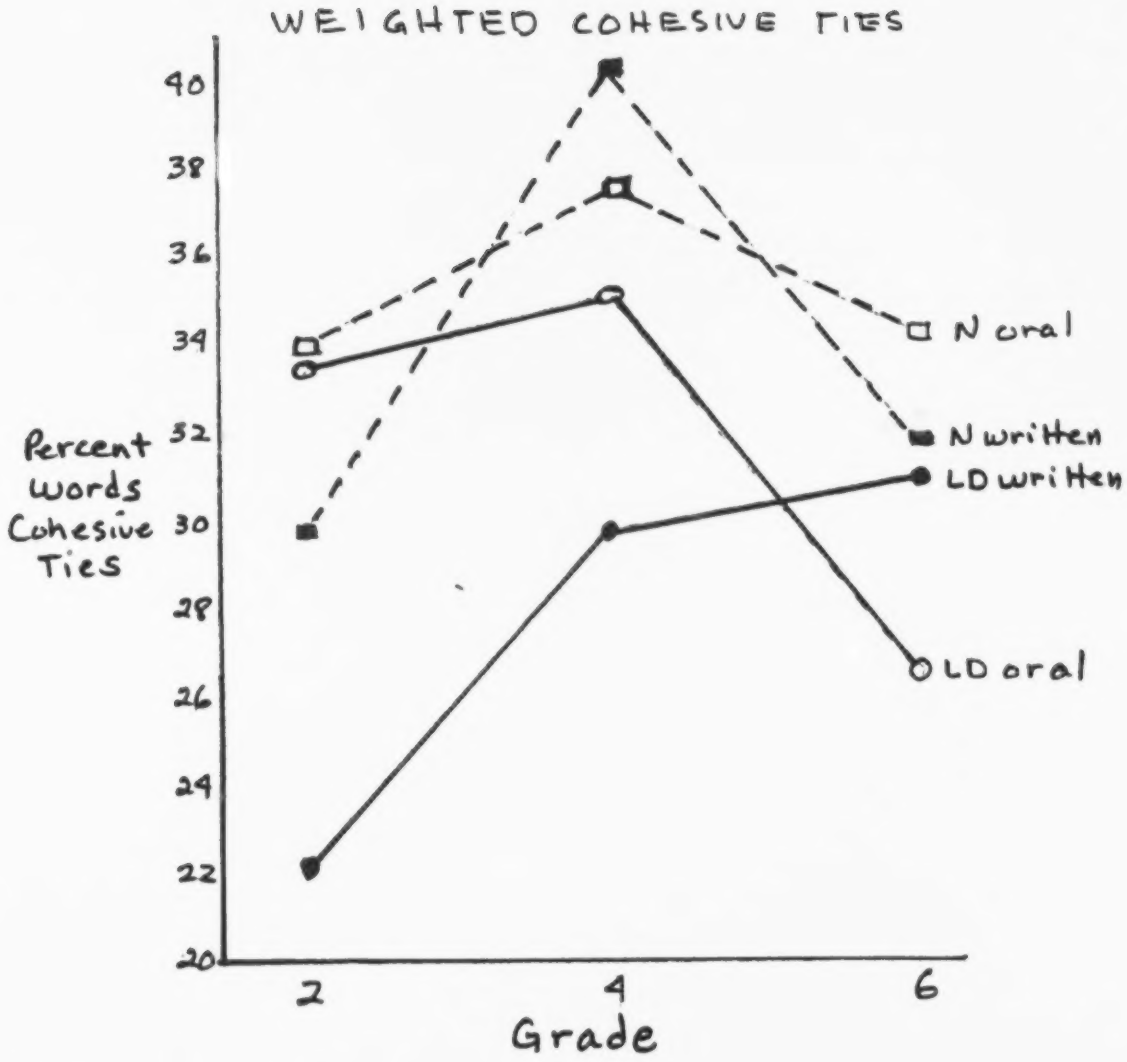

WEIGHTED COHESIVE TIES
Percent Words Cohesive Ties
40
38
36
34
32
30
28
26
24
22
20
2
4
6
Grade
N oral
N written
LD written
LD oral

Figure 3

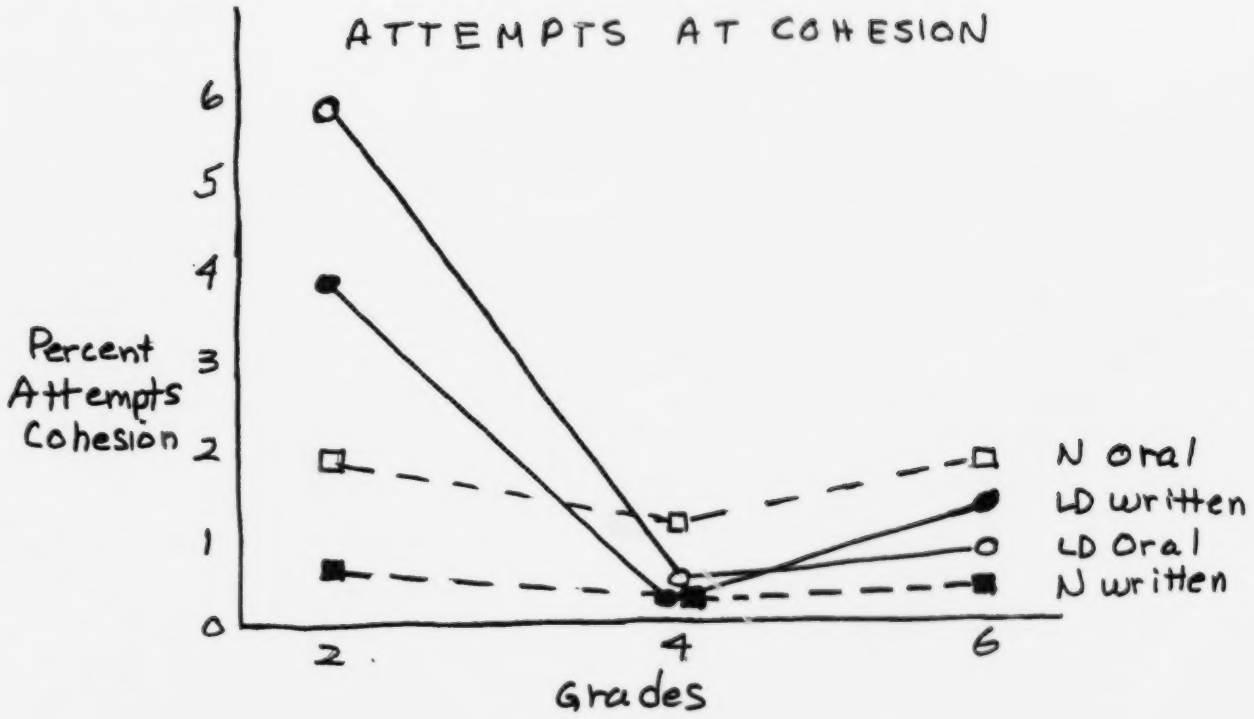
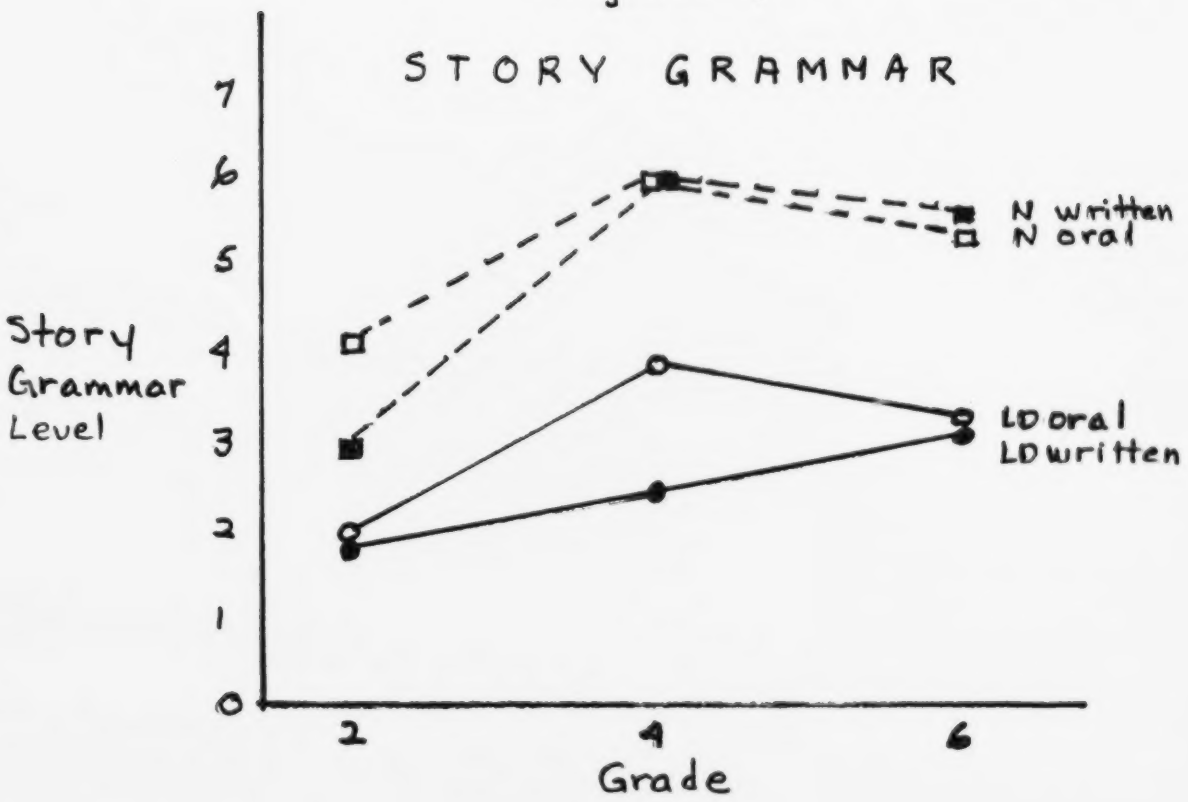

ATTEMPTS AT COHESION
Percent Attempts Cohesion
6
5
4
3
2
1
0
2
4
6
Grades
N Oral
LD written
LD Oral
N written

Figure 4


STORY GRAMMAR
Story Grammar Level
7
6
5
4
3
2
1
0
2
4
6
Grade
N written
N oral
LD oral
LD written